177 241 marabouts from the Touat who brought with them the system of irrigation by foggara. The Tuareg later grasped the advantage they could gain from multiplying these centers, and so, at the moment of the French occupation, more than forty centers were being exploited.

423 241 The enjoyment of land appertains to the people who first cultivated it. Land of itself appertains to the amenokal, but he leases it out and in return levies an annual tax -- mesk -- on the harvest, in [427 651] the amount of four guessa of wheat, or about 10 kilograms per garden. The land may thus have as proprietors Imochar or Imrad, indeed Enaden, but Iklan may not hold gardens.

241 427 Gardens are not cultivated by their proprietors but by Negro tenant farmers, natives of the Touat or Tidikelt, who are called harratin (singular hartani). An arrangement is worked out between them and the proprietors on the following terms: the proprietor furnishes the hartani two loads of millet a year for his sustenance, [312] seeds, a hoe, and then pays for digging /245/ the wells of the foggara. Once the foggara has been dug, the hartani is responsible for keeping it up. He sows, waters, harvests, threshes the grain, and keeps one-fifth of the harvest. Furthermore, he has the right to sow on his own account in the irrigation canals and to cultivate several beds of vegetables.

[311 312 241] Centers of cultivation are set up on the terraces of valleys when they are wide enough and have old alluvial deposits. The feggaguir /plural of foggara -- translator/ of the Ahaggar have nothing in common with those of the Tidikelt or those in the Saoura oasis, which pipe water to the gardens from great distances, from the geological faults where it is retained. In the Ahaggar rain water collects in the wadi beds and is stored under the sand. The feggaguir are therefore dug in the wadi bed and seek water at distances varying from one to seven kilometers. The wadi presents a certain slope, and it is necessary to bring the water gradually to the same level or to a level slightly higher than that of the gardens. The feggaguir

include a first subterranean part made of numerous wells of depths varying from two to four meters, linked together by a small canal serving as a water conductor; then comes a part on top of the ground in the form of a canal, first at the same level as the wadi, then at a slightly higher level. They empty into the distribution reservoirs (majem), which by secondary canals (seguia) carry water to the gardens to be irrigated.

These agricultural centers therefore extend along the wadi on both sides of its banks. The cultivators settle near their gardens and live in straw or reed huts or little clay houses.

There are five centers in the high mountains between 1, 500 and 1, 800 meters in altitude, but the majority are located between 1, 200 and 1, 500 meters. Some of them can be lower, such as Silet (730 meters) and I-n-Amegel (1, 030 meters).

Some are small date groves such as Silet and Tibeghîn, which have 10, 000 palm trees, Ideles, Tâhârt, and Ăbalessa, but because of its altitude, the Ahaggar does not seem to be very suitable for date growing. The instability of the harratin is also an obstacle to the development of arboriculture which demands continual care. Cultivators who can be here today and gone tomorrow would not be capable of interesting themselves in work from which they could not draw immediate profit. The country would lend itself, however, to rather large-scale cultivation of peaches, /246/ apricots, figs, and grapes. The little center of Tăzerouk has many peach trees, and the center at Tit produces a famous raisin.

The Ahaggar soil is of a high quality, owing part of its richness to elements of volcanic origin which make up a large proportion of the alluvial deposits. Furthermore, the climate favors agriculture so much that the natives obtain two or even three harvests a year.

In the medium altitude centers, they sow wheat and barley in December and harvest it in May. Barely finished with this, they sow millet which is harvested at the beginning of October. In between the natives also engage in kitchen gardening: carrots,

423 When pasture is scarce as the result of a long dry period, an
621 understanding is reached between the different tribal chiefs, and
311 one of them may authorize the other's tribe to come nomadize on his territory, on the condition, of course, that they not do any damage, mutilate the trees, or engage in hunting.

185 When a region has been abundantly favored by rain, the amrar
423 decrees the land forbidden -- ganent. No one can go there, in-
621 cluding the people of the tribe. This measure is designed to protect
311 young growths from the teeth of the animals and let the pasture grow to maturity. A few weeks later the interdiction is raised, the land is free, and anyone, without distinction, may profit from it, always conforming, of course, to the jurisdiction /sic/ concerning the protection of trees and to the hunting interdiction.

423 Animals straying on the land of a neighboring tribe are /256/
621 returned to their owners without the intervention of any sanction.
685 But when a flock is surprised on ganent land, the owner is fined one head of livestock -- one goat if it is a flock of goats, one sheep if it is a flock of sheep, one camel if it is a herd of camels.

A branch cut by a member of a neighboring tribe entails a fine
[185] of one goat or one sheep. This rule is not often applied, however, for the Tuareg have little respect for the protection of trees.

/257/

Chapter 7

Care of the Body and Bodily Habits

515 Cleanliness and care of the body. -- In a country where water is scarce, it is natural that the people are not inclined to wash every day. The Tuareg, through living in the desert far from wells, have lost the habit of washing themselves. It is not that they despise

241 /70 cont./ This /second/ contract system would appeal
605 very much to the Tuareg, carefree by nature, improvident, and rarely possessing the necessary grain for the loans to the khammès. However, it is very little favored by the harratin, who prefer to have the advance of millet furnished by the proprietor under the first contract system, the right to the personal guemouns and to the gleanings, not counting the little daily thefts.

It is quite evident that these are Draconian contracts for the cultivators, who merely exist and are at the mercy of a bad harvest. The Targui may, thanks to his herds and to barter, survive several lean years, but the hartani cannot. It it not unusual to see the latter get through the period between the depletion of the winter reserves and the new wheat harvest by eating crushed date pits, young shoots of tahli, and sometimes even barley and wheat in the blade.

241 Land is seeded according to the amount of water available.
311 When the output of the foggara is low, the cultivated area is restricted. It even happens, after several dry years, that the water table in the wadi shrinks to the point of disappearing. The gardens are then abandoned, the agricultural center deserted. The /71/ cultivators withdraw to a more favored village. When the rains bring up the water levels again, the dead centers may be worked once more.

241 The land is almost never manured in the Ahaggar. A system of preparing the land called "tiksal" in Tamashek is preferred. Each year the hartani gathers a clayey soil from a slope near the gardens. He carries this back, basket by basket, and spreads a thin layer on each guemoun. This virgin soil reinvigorates the cultivated land, which is quickly exhausted because of the irrigation; it contains almost no humus or limestone.

Sometimes, when the distance is not too great, the gardener brings the soil from an old root system of a dead fersig /tamarisk/ or tahla, the only humus to be found.

7;Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

132 When rain is falling in Ahaggar water immediately flows down the rocky mountain slopes into the sandy river valleys, which may become flooded shortly after rain has started. Indeed, the flood will often rise so suddenly and violently that camels and other animals grazing in the valleys are caught by the strong foaming stream of water. Even humans have been killed by the sudden rise of a flood, but most people will not camp in the river bed itself late in summer when heavy rainfalls are expected to occur. A river valley will generally not be flooded for more than one or two days, but it may, after extremely heavy rain, contain water for a week or even longer. This was the case in the summer of 1953 when the valley of Abalessa in Ahaggar turned into an immense river more than a hundred metres
137 wide. Owing to such heavy rainfalls it is possible for perennial plants with a well developed root-system to survive near the river valleys even in dry years. Outside the river valleys there is very little vegetation of perennial plants in Ahaggar. The bulk of the country has no permanent vegetation, and permanent plants are always more abundant along the broad river valleys of the lower country than along the narrow valleys higher up in the mountains.

Pastures of annual plants may spring up almost anywhere in the desert – even in the otherwise barren countries of *ténéré* and *tanezrûft*, where they then constitute valuable fodder for the camels of passing caravans. Rainfall in Ahaggar is most common in the highest parts of the country, where, on the other hand, little perennial vegetation is found. In periods of drought this region is so to speak nothing but rocks and boulders, while after rain in summer it becomes covered with a green curtain of annual plants. South of Ahaggar important perennial vegetation is not found until we arrive at the outskirts of the Adṛaṛ and Ayr Mountains, where it is extremely rich compared with Ahaggar. Indeed in Southern Ayr trees and bushes may form dense forests in the valleys outside of which there is also some perennial vegetation. The Ayr Mountains belong to a special zone of vegetation termed *sahel* by French geographers (cf. Capot-Rey 1953a, p. 26 ff.). From an economic point of view the main
[132] characteristic of this zone, which includes Ayr and Adṛaṛ, is that it has a fixed wet season and consequently pastures of annual plants spring up every year over large areas. South of Ayr and Adṛaṛ the zone of *sahel* gradually changes into the Sudanese savannah.

137 Tuareg country thus falls into three distinct zones of vegetation with rather different conditions
● 311 for stock-breeding:—
233 1) *True Desert* comprising the territories of *Kel Ahaggar* and *Kel Ajjer*. Rainfall is irregular, and pastures of annual plants do not spring up every year. The main livestock are goats, while sheep are bred only to a very limited extent, and the nomads have no cattle.

2) *Sahel* comprising Adṛaṛ and Ayr and part of the plains situated between these two mountain massifs. This zone has some of the characteristics of the true desert, but it has a fixed wet season in summer and consequently pastures of annual plants develop every year. Goats are very important and so are sheep; most nomads keep a few cows (zebus).

3) *Savannah* covering mainly the territories of *Kel Geres*, *Iwllemmeden*, and *Kel Tademaket*. Perennial plants grow over extensive plains, and there is a regular spring of annual vegetation. The main kinds of livestock are cows and sheep. In the savannah Tuareg nomads frequently have horses as riding animals, whereas in the two former zones horses are normally bred only by sedentary people. – Camels and donkeys are bred by all Tuareg.

7:Nicolaisen E-5 (1951-1962) 1963 M525 Tuareg M525

Sub-areas of the territory of the Aguh-en-tehlé tribe

(The tribe is divided into three sub-tribes named Kel *Taṛhawhawt*, *Isandan*, and *Kel Aṛefsa*)

Tenants	Value of sub-area	Annual land-rent to the *Amenukal*
SAMA ALATOKH, chief of the *Aguh-en-tehlé*, chief of the sub-tribe *Kel Taṛhawhawt*, leader of the section *Kel Twes*	Cultivation grounds at Taṛhawhawt and I-n-dalaġ Hunting of barbary sheep Wild donkeys for domestication	2 donkeys
OMANA, *khalifa* (leader) of the *Ikenkeren* section of the sub-tribe Kel *Taṛhawhawt*	Hunting of barbary sheep Collecting of wild seeds	3 goats
ABERĠALI, *khalifa* of the *Kel Tarayin* section of the sub-tribe *Kel Taṛhawhawt*	Hunting of barbary sheep	2 goats
KHOFA of the *Kel Tarayin* section. No position as leader	Cultivation grounds at I-n-aġriwal and I-n-dalaġ. Hunting of barbary sheep. Wild donkeys	2 donkeys
DEYNI, chief of the *Kel Aṛefsa* sub-tribe forming only one section	No particular value	No land-rent
AKAWALI, chief of the *Isandan* sub-tribe and leader of the *Kel Afara-he hin* section	Cultivation grounds at Tahifet Hunting of barbary sheep Wild donkeys	1 donkey
HANU, *khalifa* of the *Kel Azernen* section of the *Isandan* sub-tribe	Cultivation grounds at Tamanṛaset In the past wild donkeys	1 donkey
KHOSENI, *khalifa* of the *Ṛelayddin* now attached to the *Aguh-en-tehlé* tribe	*Khoseni* is in command of the *Ṛelayddin* territory to which all members of the *Ṛelayddin* have equal rights. Each of them gives two goats annually to the *Amenukal*	

The Ahaggar Tuareg have various terms to indicate the size of a camp. A large camp is always known as *amezzaṛ*, while a small camp is called *ɣrewen* or *tamezzuk*. These two terms are used to distinguish between goat-camps and section camps (camel camps) though they do not have so absolute a meaning. Two camps placed close to each other (100–200 metres between them, whether of the same tribe or not) are known as *heregen* (or *amezzaṛ n heregen*) and a camp very far from wells or water pools is called *aharaṣen*. Apart from the migrations between the *Abada* and the *Atakor* zones and those beyond Ahaggar in case of severe drought, nomadic migrations of the Ahaggar Tuareg are not very extensive and occur within a limited area. The Ahaggar Tuareg are not "grands nomades" like

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

many tribes of the northern desert, and migrations are on the whole independent of caravan trading. Migrations are to some extent determined by agriculture in cases where the households possess irrigated gardens cultivated on their behalf by the *Ḥarratin* (*Izeggaren*). Some goat-camps may move their tents close to the agricultural settlements when wheat and barley are harvested in April. Date palm-owning Tuareg of two vassal tribes (*Iklan-en-tawsit* and *Ikechchemaden*) will also visit the oases of Silet and Tibeghin where dates are harvested in August and September. But the Tuareg visiting these oases will generally not take flocks and tents with them when collecting their dates, which are harvested mainly by black-skinned *Ḥarratin* of Abalessa. It should once more be mentioned that most Ahaggar tribes in dry years keep their camel herds outside of Ahaggar – mainly in Tamesna – and the members of a section have their herds guarded collectively in these distant regions.

The territory of a vassal tribe is generally divided into sub-areas, the right to which is vested in individual tenants. These sub-areas may be valuable grazing grounds, but most of them have an economic value in other respects also. Some are important hunting grounds for barbary sheep or for the catching of wild donkeys for domestication, others have a value for the collection of wild seeds, or have soil and water suitable for agriculture. A few areas possess all these qualities. I have studied the division of the tribal territory into sub-areas only in the two tribes *Dag Ṛali* and *Aguh-en-tehlé*. In the *Aguh-en-tehlé* tribe there is a certain correspondance between sections and sub-areas in the way that most sub-areas belong to individuals of the matrilineage which forms the core of a particular section. Consequently the Tuareg of the *Aguh-en-tehlé* tribe sometimes speak of sub-areas as section territories. However, two tribal sections living outside the tribal territory have no particular sub-areas, and one section has two sub-areas, the rights to which are vested in two individual tenants (cf. p. 149). In the *Dag Ṛali* tribe there are more sub-areas than tribal sections, and some sub-areas have two tenants who belong to distinct tribal sections, members of which all have the right to use these sub-areas (cf. p. 148). When a tenant dies his rights to a sub-area should be taken over by a maternal kinsman who lives in the section to which he belongs matrilineally. Tenants of sub-areas are frequently section-leaders. In the lists p. 148–149 where I mention the sub-areas in the *Dag Ṛali* and *Aguh-en-tehlé* tribes are indicated the names of tenants, the value of their sub-areas, and the annual land-rent paid to the *Amenukal*, who is the true master of the land inhabited by tribes of the *Kel Rela* drum-group.

For the land-rent (*ehéré-n-amaḍal*) paid to the *Amenukal* the tenants obtain the following rights over their sub-areas:—

(1) They can forbid grazing within their area or in part of it in order that plants may germinate and become fully developed. For plants valuable exclusively for grazing domestic animals the period of protection will be up to two months, but certain plants which have seeds valuable for collecting are protected for three months.

(2) They have the right to half of all the wild donkeys caught in their areas.

(3) They have the right to part of all barbary sheep killed. Foucauld says that in certain hunting grounds the hide and the meat of a slain animal must be given to the tenant, while the hunter can keep only the head, the paunch, and the intestines (Foucauld 1922, p. 81; Foley 1930, p. 43 f.). My own information agrees with Lhote's statement that the tenants in general have the right to the hide,

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

p. 447; Bissuel 1888, p. 94 f.; Harding King 1903, p. 272, photograph opposite title-page; Rodd 1926a, p. 235; Lhote 1955a, p. 375).

In Ayr I collected evidence of the fact that the sling known as *éfezemfes* was very common in former days. It was made from plaited dum palm leaves, but the Tuareg claim that it was not a hunting weapon, as it could not be used with precision. For the same reason, it is said, the sling could not be used for herding domestic animals – there would be a great risk of wounding them. It seems as though the sling among the Ayr Tuareg was used mainly as a toy. It has apparently disappeared, and a Tuareg of the religious *Ineslemen* class told me that the sling was a bad thing to use, because of a story in the Koran of a sling that was once used to throw a man into the fire. I do not know whether the sling is, or was, used among the Northern Tuareg, but think it very likely. The sling has an extremely wide distribution in Africa, and it has been recorded from various northern Berber tribes and from the Fezzan (cf. Lagercrantz 1950, p. 214 ff.).

The Tuareg of Ahaggar and Ayr, like pastoral Arabs of Algeria, frequently carry a short, heavy stick (*aburi*). A stick of this kind is sometimes used as a throwing stick, or throwing club, by Tuareg and Arabs, but cannot be characterized as a proper throwing stick. It is only occasionally used as a hunting implement thrown against birds and small animals and serve many different purposes. I believe that most Tuareg carry such heavy sticks as a weapon for personal protection and for killing poisonous snakes. In literature it is stated that true throwing clubs or throwing sticks occur among the Tuareg (cf. Lindblom 1925, I, p. 117, 137 f.), but they seem to be unknown both in Ahaggar and in Ayr. A large wooden club, collected at Timbuktu by O. Hagerup and now in the National Museum (Copenhagen), is rather to be considered a weapon than a hunting implement (cf. Fig. 120 b). The throwing knife that is sometimes stated to be a Tuareg weapon is not traditionally used by these people. A rare throwing knife may be introduced into Ayr from the Teda together with spears and knives of Teda type (cf. Lagercrantz 1950, p. 202 f.).

Hunting may have been important to many Tuareg in the past when game was more abundant. Today true hunters are found mainly in tribes living in isolated and mountainous regions, notably among the *Kel Tamgak* or *Imeddleraren* (Ayr), and among the *Dag Rali* (Ahaggar). It is very interesting that proper hunting territories are found within the territory of the *Dag Rali* tribe, and it is significant that it is strictly forbidden to graze domestic animals withing two hunting territories where barbary sheep are also protected for a period of three months every year (cf. p. 148). It is also interesting that the Tuareg have certain age-terms which are used exclusively for game animals. Thus the Ahaggar Tuareg have three age-terms for gazelle:—

Age	Male	Female
Kid from its birth to the appearance of its horns . .	*awhim*	*tawhimt*
Animal not yet fully grown having small horns . . .	*ahyar*	*tahyart*
Fully grown animal	*ahenkoḍ*	*tahenkoḍ*

Certain superstitious usages and beliefs are connected with hunting among the Tuareg:—

(1) When a gazelle is killed its black tail-tuft is immediately cut off and placed in one of the animal's nostrils (Fig. 122). This is common practise among all Tuareg and also among Arabs of the Sahara.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

by many Tuareg, who say that they have not always known this white cotton, though indigo cotton has been introduced from the Sudan since very remote times). Maize has a normal period of growth of about three months, and two – in certain places perhaps even three – yields are taken in the hot seasons.

In addition to the above-mentioned cereals there are various kinds of vegetables grown in the Ayr gardens. Tomatoes (*tomatem*; *Solanum lycopersicum*) are grown at most seasons with the exception of the dry and very hot summer period (*ẹwilen*). Also common in the Ayr gardens is the sweet potato (*dankale*; *Ipomoea Batatas*), which is sown at the beginning of the rains and harvested in winter. The true potato (*batata*; *Solanum tuberosum*) has been introduced more recently, and is grown mainly to be sold to European households in Agadez. It is grown in Eastern Ayr (Tabello). Melons (*Cucumis melo*) and water melons (*Colocynthis citrullus*) are grown all over Ayr and there are different vegetables such as onions (*Allium cepa* & *A. sativum*), which are harvested at most seasons. Two plants are grown mainly because they are important as admixtures to porridge sauce. One is called *ẹkabewwa* (*Corchorus olitorius*); it has maize-like seeds which are pounded in a mortar for sauce-making. The other plant is known as *malokhiya* (*Corchorus tridens*); its leaves are dried and pounded for sauce (cf. p. 243). The latter plant also grows wild outside the gardens. There are in Ayr also certain spice-plants, e.g., *Capsicum annuum* & *C. frutescens*. To all these cultivated plants can be added certain fruit trees, such as the date palm (*talesdar*; *Phoenix dactylifera*), the fig tree (*tahart*; *Ficus carica*) grown in the mountains, and the lemon tree (*lemon*; *Citrus aurantifolia*) which is grown in Southern Ayr; it yields very small fruit which remains green even when ripe. It should finally be mentioned that the cotton plant (*ebduga*; *Gossypium hirsutum*) is also grown in some gardens of Southern Ayr. According to Miré and Gillet it was introduced into Ayr by the Hausa, but the plant has also been introduced further north in the Sahara in Tawat (Miré & Gillet 1956, p. 244). As stated by Rodd, the cotton plant is rare in Ayr and has perhaps been recently introduced into this region (Rodd 1926a, p. 132). There are many other cultivated plants in Ayr, but the above mentioned constitute the most important species.

In Ayr, as in the north, irrigated cereals form the basis of agriculture. Irrigation is carried out by means of a system introduced from the north, and the agricultural techniques largely resemble those of that section of the Sahara inhabited by Northern Tuareg, though there are certain differences. A new garden in Ayr is prepared by cutting and burning away the wild vegetation of trees, bushes, herbs, and grasses. By crop rotation (wheat and barley in winter; maize, millet, and sorghum in summer) it is possible to cultivate the same garden plot for a few years in succession – up to six or seven years, it is said. After this time it becomes necessary to make a new garden, or to manure the old garden plot with camel and cow dung whilst manure (*taki*) from other animals or from human beings is said not to be used, as it would cause the crops to become inedible. A well-manured garden plot can be cultivated continuously for about fifteen years. But fertilizing is not practised by all agriculturists, and to my knowledge they do not carry fresh soil to the garden plots as is the case with the agriculturists of Ahaggar. Agriculture in Ayr therefore frequently resembles shifting cultivation, though plots are irrigated, and deserted garden land is frequently seen in the valleys where agriculture is practised.